IN THE CLAIMS

1. A wrist worn heart rate variability monitor, comprising:

at least two electrical contacts for detecting analog electrical signals generated within a body when placed in contact with the body;

a circuit that conditions the electrical signals and converts the analog electrical signals to digital signal data;

a heart rate variability signal processor that monitors and analyzes the digital signal data and obtains heart rate variability data therefrom; and

a memory capable of storing at least 24 hours of real time digital signal data.

2. The apparatus of claim 1, further comprising the electrical signals being ECG signals from the heart.

3. The apparatus of claim 1, further comprising a processor that is capable of performing a heart rate variability test.

4. The apparatus of claim 1, further comprising a processor that is capable of performing a heart rate variability test while a user sleeps.

5. The apparatus of claim 1, further comprising a processor that is capable of performing a heart rate variability test while a user is awake and resting.

6. The apparatus of claim 1, further comprising a processor that is capable of performing a heart rate variability test while a user is physically active.

7. The apparatus of claim 1, further comprising a processor that is capable of analyzing the heart rate variability to determine when the user is asleep and then performs a heart rate variability test during the sleep period.

8. The apparatus of claim 1, further comprising a timer, wherein the timer is capable of timing the duration of the monitoring of the heart rate variability data and time-stamping the data.

9. The apparatus of claim 3, further comprising a timer, wherein the timer is capable of timing the duration of the heart rate variability test.

10. The apparatus of claim 8, further comprising a waking prompt capable of activation when a specified time for monitoring the heart rate variability has passed, and wherein the processor stops monitoring heart rate variability when the waking prompt is activated.

11. The apparatus of claim 1, wherein the processor differentiates between a user's awake and sleep stages based upon heart rate variability data.

12. The apparatus of claim 11, wherein the processor recognizes differentiation between a user's awake state and non-REM sleep state based upon heart rate variability data.

13. The apparatus of claim 12, further comprising a waking prompt, wherein the waking prompt is activated when non-REM sleep state is recognized.

14. The apparatus of claim 11 wherein the processor recognizes differentiation between a non-REM sleep state and a REM sleep state based upon heart rate variability data.

15. The apparatus of claim 14, further comprising a waking prompt, wherein the waking prompt is activated when REM sleep state is recognized.

16. The apparatus of claim 14, further comprising a processor that is capable of performing a heart rate variability test during the non-REM sleep state and stopping the test when the REM sleep state is recognized.

17. The apparatus of claim 14, further comprising a processor that is capable of discerning and counting REM sleep state cycles and wherein the waking prompt is activated after a specified number of REM sleep state cycles are completed by a user.

18. The apparatus of claim 1, further comprising a processor capable of monitoring heart rate variability data during a user's sleep period and wherein a sleep apnea event may be detected therefrom.

19. The apparatus of claim 1, further comprising a waking prompt, wherein the waking prompt is activated when a sleep apnea event is detected.

20. The apparatus of claim 2, further comprising the monitor having a back surface; and a conductive membrane disposed on the back surface of the monitor and having contact with the user's skin to increase the monitor's ability to pick up the ECG signals.

21. The apparatus of claim 20, further comprising the conductive membrane being porous.

22. The apparatus of claim 21, further comprising conductive gel, the conductive gel being incorporated into the pores of the conductive membrane to increase the monitor's ability to pick up the ECG signals.

23. The apparatus of claim 1, for the control of appliances installed in each room, comprising:

home information transmission paths from the wrist worn heart rate monitor to each room;

at least one home control unit receiver, connectable to the transmission paths, installed in selected rooms for transmitting and receiving information along the transmission paths, the wrist worn heart rate variability monitor capable of transmitting an awake signal or a sleep signal to the at least one home control unit receiver based upon heart rate variability data;

a central home control unit, connectable to the transmission paths, the at least one home control unit receiver and to appliances in the rooms, whereby the control unit receives the awake or sleep signal transmitted by the at least one control unit receiver, wherein when an awake signal is transmitted to the appliances by the computer, the appliances are turned on and when a sleep signal is transmitted by the computer, the appliances are turned off.

24. The apparatus of claim 23, further comprising the home information transmission pathways capable of receiving wireless transmission of the from the monitor, the pathways wirelessly transmitting the wake or sleep signal to the central home control unit and the pathways wirelessly transmitting the wake or sleep signal to the home appliances.

25. The apparatus of claim 23, further comprising the home information transmission pathways capable of receiving electronic transmission of wake or sleep signal from the from the monitor, the pathways electronically transmitting the wake or sleep signal to the central home control unit and the pathways electronically transmitting the wake or sleep signal to the home appliances.

26. A Wrist worn heart rate variability monitor, comprising:

at least two electrical contacts for detecting ECG signals generated by a body's heart when placed in contact with the body;

a circuit that conditions the electrical signals and converts the analog signal to a digital signal;

a memory capable of storing 24 hours of real time digital signal data;

a heart rate variable signal processor that monitors and analyzes the digital data and obtains heart rate variability data therefrom;

the processor further capable of performing a heart rate variability test, the processor further capable of differentiating between a user's awake and sleep stages based upon heart rate variability data;

a timer, the timer capable of timing the duration of the monitoring of the heart rate variability data; and

a waking prompt, the waking prompt capable of activation when REM sleep is recognized.

27. A Wrist worn heart rate variability monitor, comprising:

optical sensors for detecting ECG signals generated by a body's heart when placed in contact with the body;

a circuit that conditions the electrical signals and converts the analog signal to a digital signal;

a memory capable of storing 24 hours of real time digital signal data;

a heart rate variable signal processor that monitors and analyzes the digital data and obtains heart rate variability data therefrom;

the processor further capable of performing a heart rate variability test, the processor further capable of detecting a sleep apnea event based upon heart rate variability data;

a timer, the timer capable of timing the duration of the monitoring of the heart rate variability data; and

a waking prompt, the waking prompt capable of activation when a sleep apnea event is recognized.

28. A method for monitoring heart rate variability using a wrist worn heart rate variability monitor, comprising:

detecting electrical signals generated from a body by the body's heart;

analyzing the signals to determine heart rate variability; and

monitoring and storing the heart rate variability data.

29. The method of claim 28, further comprising performing a heart rate variability test.

30. The method of claim 28, further comprising:

analyzing the heart rate variability data to determine when the user is asleep; and

performing a heart rate variability test while the user is asleep.

31. The method of claim 28, further comprising performing a heart rate variability test while the user is awake and resting.

32. The method of claim 28, further comprising timing the monitoring of the heart rate variability data.

33. The method of claim 28, further comprising differentiating between an awake state and non-REM and REM sleep stages using heart rate variability data.

34. The method of claim 33, further comprising timing the duration of the sleep stages.

35. The method of claim 34, further comprising time-stamping the heart rate variability data.

36. The method of claim 33, further comprising waking the user after recognition of entry into REM sleep state.

37. The method of claim 33 further comprising:

recognizing the completion of at least one REM sleep state cycle; and

waking the user after recognizing the completion of one or more REM sleep state cycles.

38. The method of claim 33, further comprising:

recognizing non-REM sleep;

transmitting a signal from the monitor to at least one home control unit receiver;

transmitting a signal from the at least one home control unit receiver to a central home computer;

placing home in sleep mode based on instructions from the central home computer;

monitoring for sleep exit;

recognizing sleep exit;

transmitting a signal from the monitor to the at least one home control unit receiver;

transmitting a signal from the at least one home control receiver to the central home computer; and

placing home in awake mode based on instructions from the central home computer.

39. A method for monitoring heart rate variability using a wrist worn heart rate variability monitor, comprising:

detecting electrical signals from a body by the body's heart;

analyzing the signals to determine heart rate variability;

monitoring and storing the heart rate variability data;

analyzing the heart rate variability data to determine when the user is asleep;

differentiating between an awake state, non-REM sleep state and REM sleep state; and

waking the user after recognition of entry into the REM sleep state.

40. The method of claim 28, further comprising:

detecting a sleep apnea event.

41. The method of claim 40, further comprising:

transmitting an alarm to a 3rd party, alerting them of the sleep apnea event.

42. A computer program product for monitoring heart rate variability using a wrist worn heart rate variability monitor, comprising:

detecting electrical signals generated from a body by the body's heart;

analyzing the signals to determine heart rate variability; and

monitoring, analyzing and storing the heart rate variability data.

43. The computer program product of claim 42, further comprising performing a heart rate variability test.

44. The computer program product of claim 42, further comprising analyzing the heart rate variability data to determine when the user is asleep; and

performing a heart rate variability test while the user is asleep.

45. The computer program product of claim 42, further comprising performing a heart rate variability test while the user is awake and resting.

46. The computer program product of claim 42, further comprising timing the monitoring of the heart rate variability data.

47. The computer program product of claim 44, further comprising timing of the duration of the performance of the HRV test.

48. The computer program product of claim 42, further comprising differentiating between an awake state and non-REM and REM sleep stages using heart rate variability data.

49. The computer program product of claim 48, further comprising waking the user after recognition of entry into REM sleep state.

50. The computer program product of claim 48, further comprising:

recognizing the completion of at least one REM sleep state cycle; and

waking the user after the recognizing the completion of at least one REM sleep state cycle.

51. The computer program product of claim 48, further comprising:

recognizing non-REM sleep;

transmitting a signal from the monitor to at least one home control unit receiver;

transmitting a signal from the at least one home control unit receiver to a central home computer;

placing home in sleep mode based on instructions from the central home computer;

monitoring for sleep exit;

recognizing sleep exit;

transmitting a signal from the monitor to the at least one home control unit receiver;

transmitting a signal from the at least one home control receiver to the central home computer; and

placing home in awake mode based on instructions from the central home computer.

52. The computer program product of claim 42, further comprising recognizing a sleep apnea event.